REMARKS

Claims 1-14 are pending in the instant application. Claims 1-12 have been rejected. Claim 1 has been amended. Claims 13 and 14 are allowed. No new matter has been added. Reconsideration is respectfully requested in light of these amendments and the following remarks.

I. Allowed Claims

Applicants are pleased to acknowledge that claims 13 and 14 have been allowed. The Examiner has indicated that the references of prior art on record fail to teach or suggest the combination of limitations as set forth in independent claim 13 and dependent claim 14.

II. Rejection of Claims Under 35 U.S.C. §103

The Examiner has rejected claims 1-5 and 6-11 under 35 U.S.C. §103(a) as being unpatentable over Schoenbach et al. (hereinafter Schoenbach). The Examiner suggests that Schoenbach discloses a fluorescent lamp comprising a sealed light-transmissive tube containing a gas, with first and second spaced-apart electrodes mounted within the tube. The first electrode is suggested to

comprise a conductor having a plurality of micro hollows (column 2, line 66-column 3, line 4). The lamp is further suggested to include electrical means for coupling electrical energy to the first and second electrodes (Column 3, lines 6-8). The lamp is suggested to have a dielectric layer on the surface of each electrode, with dielectric layer openings aligned with the microhollows (Column 3, lines 23-25). It is suggested that in one embodiment the lamp was described as having a mica spacer 0.2 mm thick and cathode holes 0.7 mm in diameter. The Examiner acknowledges the Schoenbach reference does not disclose the thickness of the electrodes being between 0.05 mm and 0.5 mm. However, it is suggested that having electrodes with the specified thickness is not shown to solve any problems or yield any unexpected results that are not within the scope of Schoenbach's light source. It is further suggested that Schoenbach discloses that the discharge device contains a gas at a prescribed pressure that is typically in a range of about 0.1 torr to atmospheric pressure, which is about 760 torr (Column 5, lines 30-31). It is further suggested that the Schoenbach reference discloses that the gas in the discharge chamber is an inert gas such as argon, neon, or xenon (Column 7, lines 50-51). In regard to claims 6-11, the Schoenbach reference is suggested to disclose that molecular gases,

such as nitrogen, oxygen or air and sulfur or selenium vapors and their mixtures with inert gases maybe used in the flat light source (Column 17, lines 10-12). Schoenbach is further suggested to disclose a discharge device with an electrode having a plurality of microhollows that emit radiation in a wavelength range of about 80 to 200 nanometers (Column 3, lines 26-39).

It is respectfully pointed out that claim 1 has been amended to clarify and distinguish that the light source of the present invention is a monochromatic line-emission light source which specifically emits a hydrogen Lyman-α emission line at a wavelength of 121.6 nm and a hydrogen Lyman-β emission line at a wavelength of 102.5 nm. Support for this amendment is found throughout the specification and especially at page 8, lines 9-13.

To establish a *prima facie* case of obviousness under 35 U.S.C. 103(a) three basic criteria must be met. MPEP § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art must teach or suggest all of the claim limitations.

As shown in column 3, line 34, Schoenbach teaches a **broad-band** light source which emits radiation in a wavelength range of 80 to 200 nanometers. There is no teaching of emission of the highly desirable single wavelength monochromatic radiation of the present invention. The instant monochromatic line-emission light source which emits a hydrogen Lyman-α emission line at a wavelength of 121.6 nm and a hydrogen Lyman-β emission line at a wavelength of 102.5 nm is not taught or suggested by Schoenbach. Accordingly, the prior art fails to establish a *prima facie* case of obviousness.

Further, the Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated: Under §§ 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. The Supreme Court reaffirmed and relied upon the *Graham* three pronged test in its consideration and determination of obviousness in the fact situations presented in *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 189 USPQ 449, *reh'g denied*, 426 U.S. 955 (1976) and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 163 USPQ 673 (1969). In each case, the Court discussed whether

the claimed combinations produced a "new or different function" and a "synergistic result,".

Both the scope and content of the present invention is different from that of the cited prior art. The present invention emits hydrogen Lyman-α at a wavelength of 121.6 nm and hydrogen Lyman-β at a wavelength of 102.5 nm. The device of Schoenbach **only** emits a broad band emission due to its different physical mechanisms and function. As recited in column 3, line 35-37, there is no teaching or suggestion which would motivate one of skill in the art to modify any of the mechanisms of Schoenbach's teaching to obtain the present invention.

As set forth in MPEP 2141, when applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:(A) The claimed invention must be considered as a whole; (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (D) Reasonable expectation of success is the standard with which obviousness is determined. *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

MPEP § 2143 and the Courts are quite clear; both the teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The cited combination of prior art fails to provide this reasonable expectation of success. It is only with the instant specification in hand, which demonstrates the efficacy of Applicants' invention that one of skill has a reasonable expectation of success.

Withdrawal of this rejection is respectfully requested.

III. CONCLUSION

Applicants believe that the foregoing comprises a full and complete response to the Office Action of record. Accordingly, favorable reconsideration and subsequent allowance of the pending claims is earnestly solicited.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**."

Respectfully submitted,

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MARKED UP VERSION TO SHOW CHANGES MADE

In the claims:

Claim 1 has been amended as follows:

1. (amended) A light source comprising:

a sealed, light-transmissive tube containing high pressure gases or high pressure gas mixtures at a high pressure which emits a hydrogen Lyman-α emission line at a wavelength of 121.6 nm and a hydrogen Lyman-β emission line at a wavelength of 102.5 nm;

a microhollow cathode (MHC) discharge comprising a first electrode mounted within said tube, said first electrode consisting of a conductor having a single hole or a plurality of holes therein, each of said holes having an arbitrary shape and an area in the range from 0.001 mm^2 to 1 mm^2;

a second electrode mounted within said tube and spaced from first electrode by an insulator which has a hole or holes similar to the hole(s) in the first electrode;

electrical means for coupling electrical energy to said first and second electrodes for producing discharges in each of the holes in said first electrode;

both electrodes having a thickness in the range from 0.05 mm to 0.5 mm; and

the insulating spacer having a thickness in the range of 0.1 mm to 1 mm.